

# ABSTRACT OF THE DISCLOSURE

A scanning optical system using a short-wavelength light of 500 nm or less uses a reflecting mirror having a higher absolute  
5 reflectivity and having reduced wavelength and angle dependences. Divergent ray of light emitted from a semiconductor laser is converted into an approximately parallel light beam by a collimator lens and the diameter of the light flux is reduced  
10 by an aperture before travel to a polygon mirror. The light beam from the polygon mirror passes through scanning lenses to form a small spot at any point in the entire scanning area. The semiconductor laser is a gallium nitride  
15 semiconductor laser having an oscillation wavelength of 408 nm. The polygon mirror has such a characteristic that, if the complex refractive index  $N$  of a metallic film contributing to a reflection characteristic of the reflecting mirror  
20 is defined as  $N(\lambda) = n(\lambda) - ik(\lambda)$ , then  $k(\lambda) > \sqrt{(-n(\lambda)^2 + 18n(\lambda) - 1)}$  is satisfied.